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BRIARCLIFF MANOR, NY 10510

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LIE, ANGELA M	

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/521,290
Filing Date: January 14, 2005
Appellant(s): VAN EGMOND, SUZANNE

Paul F. Wille
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed January 30, 2007 appealing from the Office action mailed July 7, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6160361	Giannopoulos et al.	7-1998

2004/0124785 Alexandrov 7-2001

http://www.school-for-chamipions.com/science/acwiring.htm

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Giannopolos et al (US Patent No. 6160361).

As to claim 1, Giannopoulos discloses an apparatus performing a method comprising the steps of: applying an amplitude modulated control current (Figure 2, element 107; column 1, lines 54-55; wherein the current level corresponds to current amplitude and Figures 4A and 4B, wherein current is modulated and corresponding voltage in a lamp is determined, column 4, lines 1-10) to a discharge lamp (Figure 1, element 25), detecting the peak value of the lamp voltage at a rising edge of the envelope of the modulated control current (column 1, lines 50-59 and Figures 4A and 4B, wherein as indicated in figure 4B, current level increases between t2 and t3 and then from t3 to t4 (i.e. rising edge) and the

voltage corresponding to those current maximums (the points reached after the rising edges) is determined), and comparing the detected peak value with previously recorded peak values for different lamp types (column 1, lines 62-64 and column 4, lines 11-16; wherein V-I characteristics comprise detected picks), and assigning the detected peak value to a lamp on the basis of the comparison (column 1, lines 60-64).

As to claim 2, Giannopoulos discloses a device comprising: means for supplying a control current (Figure 2, elements 101 and 107) to a discharge lamp (Figure 1, element 25), is characterized by the presence of means for amplitude-modulating the control current to the lamp (column 1, lines 54-55, wherein current level corresponds to current amplitude), peak detection means for detecting the peak voltage across the lamp at a rising edge of the envelope of the envelope of the amplitude-modulated control current (column 1, lines 51-59), recording means for recording peak voltages associated with lamp types (Figure 1, elements 49 and 42) and means for comparing the measured peak voltage with the recorded peak voltages and supplying a lamp type-indicating signal on the basis of the comparison (column 1, lines 62-67, and column 2, lines 1-7).

As to claim 3, Giannopoulos discloses a device wherein the means for supplying a control current to the lamp are formed by a source of comparatively high-frequency square wave voltage supplying (column 2, line 57), via a series-resonance chain (column 2, lines 58-59), a corresponding control current to the lamp (Figure 1, element 25), characterized in that means are present for square-

wave frequency modulating the comparatively high-frequency square-wave voltage (column 2, lines 57-58).

As to claim 4, Giannopoulos discloses a device wherein the means for supplying a control current to the lamp are formed by a source of comparatively high-frequency square wave voltage supplying (column 2, line 57), via a series-resonance chain (column 2, lines 58-59), a corresponding control current to the lamp (Figure 1, element 25), characterized in that means are present for square-wave pulse width modulating the comparatively high-frequency square-wave voltage (column 2, lines 57-58).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gainnopoulos et al (US Patent 6160361) in the view of Alexandrov (US Publication 2004/0124785).** Giannopoulos teaches a device as claimed in claim2, wherein the means for supplying a control current to the lamp are formed by a source of a comparatively high-frequency square-wave voltage supplying (column 2, lines 57-61), via a series-resonance chain (column 2, line 59), a corresponding control current to the lamp (column 1, line 54). Furthermore he

also teaches means for square-wave amplitude modulating the direct voltage supplied to the source of a comparatively high-frequency square-wave voltage (column 2, lines 57-58, and column 1, lines 54-55) Gainnopoulos, however does not teach that the source of comparatively high-frequency square wave voltage is fed with a direct voltage from an AC/DC converter. Alexandrov teaches an apparatus for arc detection in discharge lamp wherein the circuitry comprises AC/DC converter (Figure 2, element AC/DC converter). It would have been obvious to one of the ordinary skill in the art during the time the invention was made to incorporate AC/DC converter as taught by Alexandrov into the apparatus taught by Giannopoulos, because as shown in Giannopoulos's circuit the input starts from the DC source (Figure 1, element 13), and it is well know in the art that the standard house outlet supplies AC signal (http://www.school-for-champions.com/science/acwiring.htm), so that in order to make it possible for the user to use the apparatus at home if needed, it would be beneficiary to include AC/DC converter. It would be a very convenient solution since a user would not need to use an additional converter. Furthermore it would provide AC/DC converter along with the apparatus would prevent from possible damage to the equipment caused by the user connecting wrong AC/DC converter with the apparatus.

(10) Response to Argument

1. I (Issue): did the Examiner err in concluding that claims 1-4 were anticipated under 35 U.S.C 102(b) as being anticipated by Giannopoulos et al (US Patent No. 6,160,361).

- *In the first argument, the appellant states, "What an apparatus may be "capable of" is a matter of speculation, is not evidence, is not relevant, and is not a proper analysis.*

The Appellant's first argument has not been found persuasive because Giannopoulos's apparatus actually performs the disclosed method of claims 1-4.

- *In the second argument, the appellant states, "Adjusting current to two or more levels is not a disclosure of an amplitude modulated current. There is no periodicity".*

The Examiner does not agree with this argument because amplitude by definition, according to Encarta Webster's Dictionary (second edition), is largeness in size, volume or extent. Therefore it is very reasonable to interpret, adjusting (modulating) current to two or more levels as modulation of amplitude.

- *In the third argument, the appellant asserts, "This is not an amplitude modulated current just because current is changed, such does not constitute "modulation". After measurement, the lamp is identified. There is no return to the loop. There is no periodicity. There is no modulation".*

The Appellant's argument has not been found persuasive. "Modulation" by definition, according to Encarta Webster's Dictionary (second edition), is altering, therefore it is more than appropriate to interpret "changing" as "modulation". Furthermore, the appellant states that after the lamp is identified there is no return to the loop and there is no periodicity. The examiner would like to note, that the claimed invention disclosed in claim 1, has no teaching about periodicity

or returning to the loop. However, Giannopoulos does teach the comparison cycle (Figure 2), which can be performed whenever there is a need for new comparison (i.e. return to the loop).

- *In the fourth argument, the appellant states, "The Giannopoulos et al patent disclosed measuring current on the tread of the step.... The appellant claims measuring voltage on the riser, not a on the tread".*

The Appellant's argument has not been found persuasive. Figure 4A and 4B clearly show that the voltages V1, V2 and V3 are measured as IIAMP is increased (i.e. I1, I2 and I3). For instance maximum steady voltage is recorded while IIAMP is at I1 level, up to the point when the value of current starts to increase to the next level (i.e. I2). The examiner would like to note that voltage is measured for the entire duration of current modulation cycle, not only for the specified intervals when voltage reaches maximum, therefore as shown in figure 4A, voltage is also measured on the riser.

- *In the fifth argument, the appellant states, "At a given step, the voltage is stable, for a normal lamp. There is no disclosure of peak".*

The Appellant's argument has not been found persuasive. The term "peak" according to Encarta Webster's Dictionary (second edition) is defined as highest - being at a maximum or highest point, therefore for instance in figure 4A in the steady state, the voltage at level V1 (being at maximum) shows the peak behavior among other levels of voltage VIAMP. The Appellant did not provide

clear definition of the term "peak" in the instant specification; therefore the Examiner is entitled to assume the broadest reasonable interpretation.

- *In the sixth argument, the appellant states, ""The lamp load voltage corresponding to each of the at least two different lamp load current levels" discloses a one to one correspondence. This is contrary to appellant's disclosure of varying voltage".*

The Examiner is not certain what the appellant attempts to assert by this statement. However, "varying voltage" is not disclosed in claim 1, therefore this limitation was not treated on merits during the time of the examination.

- *In the seventh argument, the appellant states, " The examiner asserts that there is peak detection because a "specific current" is measured "which is considered a current peak".... The examiner interpretation is contrary to the ordinary meaning of the word "peak" as used by those of ordinary skill in the relevant art".*

The Examiner disagrees with the appellant's assertion. Similarly to the previous response to argument, the claim language does not disclose a peak current, instead it teaches peak voltage. Since "current peak" is not disclosed in argued claim 1, this limitation is not treated on merits during the time of the examination.

- *In the eighth argument, the appellant states, "One cannot measure peak voltage "at a rising edge of the envelope of the modulated control current" when current is not modulated but sitting at a step.*

In order to anticipate, the Giannopoulos et al. patent would have to disclose measuring current during a step change in voltage".

The Appellant's argument has not been found persuasive. As stated above the word "peak" is defined as highest - being at a maximum or highest point according to Encarta Webster's Dictionary (second edition). Consequently, assuming the definition as listed above, measuring peak voltage is equivalent with finding voltage at which potential achieves the highest or maximum value, so that in the steady state V1 would be considered pick voltage. The Appellant's also pointed out that the voltage should be measured while current is modulated. The Examiner would like to note that in figure 4B, between time t2 and t3, the current magnitude begins to rise, at this first point of rise, the corresponding measured voltage still assumes its maximum (V1) for a very short moment, followed by sudden decrease in potential magnitude. Therefore, the Examiner maintains that maximum voltage is measured at the rising edge. On the contrary to what the Appellant's alleges, it is also very evident from the figures 4A and 4B that the most changes in voltage corresponding to specific current occur during the rising edge of the modulated current and not at the "sitting at the step".

- *In the ninth argument, the Appellant states, "Claim 1 recites "detecting the peak value of the lamp voltage at a rising edge of the envelope of the modulated control current." This recites finding a single data point. In the Giannopoulos et al patent, at least two data points must be read.*

The Appellant's argument has not been found persuasive. The examiner agrees that a peak value corresponds to a single point, however in Giannopoulos et al patent, one skilled in the art could clearly determine when voltage achieves its maximum, at this would be at the level of V1 and at the VIAMP scale V1 is just point representing peak voltage at the steady state.

- *In the tenth argument, the Appellant states, "Claim 1 recites "comparing the detected peak value with previously recorded peak values for different lamp types." The comparison is data point to data point. The quoted paragraph discloses comparing at least four data points with a plurality of curves. Curve fitting is not the same as comparing two numbers. The apparatus disclosed in the Giannopoulos et al patent is incapable of performing the step recited".*

The Examiner disagrees with the Appellant's approach. Since Giannopoulos et al teaches comparing voltage and current to a plurality of V-I characteristic curves, it also involves comparing the detected peak value since this quantity is part of the I-V curve. The Examiner would like to note that the claim does not strictly disclose that the type of lamp is determined only based on the single peak value, therefore peak value could be just one among many other points in the I-V curve.

- *In the eleventh argument, the Appellant states, "With respect to claim 3, there is no disclosure or suggestion of frequency modulation".*

The Examiner disagrees with this argument. As clearly pointed in the art rejection, column 2, lines 57-60 disclose high frequency pulse train (square wave) wherein frequency can vary (i.e. frequency modulation).

- *In the twelfth argument, the Appellant states, "With respect to claim 4, there is no disclosure or suggestion of pulse width modulation".*

The Examiner disagrees with this statement, because Giannopoulos et al teach pulse width modulation, in column 2, lines 57-60.

2. I (Issue): did the Examiner err in concluding that claim 5 stand rejected under 35 U.S.C 103(a) as being unpatentable over Giannopoulos et al (US Patent No. 6160361) in the view of Alexandrov (US Publication No. 2004/01244785).

- *In the thirteenth argument on page 6, the Appellant states, "The Alexandrov publication relates to a circuit that senses amplitude modulation of signals in the ballast caused by removing a lamp while power is applied. The publication does not disclose amplitude modulating the current to a lamp (the lamp is disconnected when modulation takes place)".*

The Examiner maintains that Alexandrov's teaching is a proper art which can be used in combination with Giannopoulos's teaching. The Appellant appears to rely on Alexandrov's teaching for voltage measurement step, however the Examiner used this secondary art to show that AC/DC converter could also be utilized in Giannopoulos's apparatus. Although the AC/DC converters are very well known in the art and commonly used, the Examiner wanted to show that

those types of converters are also used in arc detection circuitry and therefore it would more than obvious to one of ordinary skill in the art to use it in Giannopoulos's teaching.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Conferees:

A. Eddie Lee, SPE

B. Don Wong, SPE AU 2163

C. Angela M Lie, Examiner AU 2163

DON WONG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100